

WHAT IS CLAIMED:

1. An inkjet printer, comprising:

an ink tank storing ink; and

an ink supply tube supplying the ink from the ink tank to a print head,

wherein

the ink supply tube is provided with a bubble catching section for catching bubbles in the ink.

2. The inkjet printer as set forth in claim 1, wherein

the bubble catching section has a space extending upwards from the ink supply tube so that the bubbles float and are caught in the space before the ink is supplied to the print head via the ink supply tube.

3. The inkjet printer as set forth in claim 1, wherein

the bubble catching section has a space above a downstream outlet so that the bubbles float and are caught in the space before the bubbles reach the outlet.

4. The inkjet printer as set forth in claim 3, wherein

$$(1/18) \cdot g \cdot d^2 / \nu \geq (L_y / L_x) \cdot (Q / S_T)$$

where  $g$  is a gravitational acceleration ( $m/s^2$ ),  $d$  is a diameter (m) of the bubbles,  $\nu$  is a dynamic viscosity ( $m^2/s$ )

of the ink,  $L_x$  is a length (m) of a flow passage in the bubble catching section,  $L_y$  is a height (m) of the outlet from a bottom of the flowing ink,  $Q$  is an average ink flow per unit time ( $m^3/s$ ), and  $S_T$  is a cross-sectional area ( $m^2$ ) of the flow passage.

5. The inkjet printer as set forth in claim 4, wherein

$$(1/18) \cdot g \cdot d^2 / \nu \geq (L_h / L_x) \cdot (Q / S_T)$$

where  $L_h$  is a height (m) of a highest part of the space from the bottom.

6. The inkjet printer as set forth in claim 3, wherein:

the ink tank is provided with a filter at an ink delivery port thereof interfacing the ink supply tube; and

$$(1/18) \cdot g \cdot C^2 / \nu \geq (L_y / L_x) \cdot (Q / S_T)$$

where  $g$  is a gravitational acceleration ( $m/s^2$ ),  $C$  is a mesh size (m) of the filter,  $\nu$  is a dynamic viscosity ( $m^2/s$ ) of the ink,  $L_x$  is a length (m) of a flow passage in the bubble catching section,  $L_y$  is a height (m) of the outlet from a bottom of the flowing ink,  $Q$  is an average ink flow per unit time ( $m^3/s$ ), and  $S_T$  is a cross-sectional area ( $m^2$ ) of the flow passage.

7. The inkjet printer as set forth in claim 6, wherein

$$(1/18) \cdot g \cdot C^2 / \nu \geq (L_h / L_x) \cdot (Q / S_T)$$

where  $L_h$  is a height (m) of a highest part of the space from the bottom.

8. The inkjet printer as set forth in claim 3, wherein

the ink tank is provided with a mesh filter at an ink delivery port thereof interfacing the ink supply tube; and

$$(1/18) \cdot g \cdot (2^{1/2} \cdot M)^2 / \nu \geq (L_y / L_x) \cdot (Q / S_T)$$

where  $g$  is a gravitational acceleration ( $m/s^2$ ),  $M$  is a filter precision (m) of the mesh filter,  $\nu$  is a dynamic viscosity ( $m^2/s$ ) of the ink,  $L_x$  is a length (m) of a flow passage in the bubble catching section,  $L_y$  is a height (m) of the outlet from a bottom of the flowing ink,  $Q$  is an average ink flow per unit time ( $m^3/s$ ), and  $S_T$  is a cross-sectional area ( $m^2$ ) of the flow passage.

9. The inkjet printer as set forth in claim 8, wherein

$$(1/18) \cdot g \cdot (2^{1/2} \cdot M)^2 / \nu \geq (L_h / L_x) \cdot (Q / S_T)$$

where  $L_h$  is a height (m) of a highest part of the space from the bottom.

10. The inkjet printer as set forth in claim 8, wherein

the mesh filter is fabricated by intertwining a stainless material into a net.

11. The inkjet printer as set forth in claim 3, wherein

the space extends above a height of the outlet up to a highest part of the bubble catching section.

12. The inkjet printer as set forth in claim 1, wherein

there is provided a valve between the ink tank and the bubble catching section to open/close a flow passage.

13. The inkjet printer as set forth in claim 1, wherein

the bubbles are discharged from the bubble catching section using a vacuum pump.